GenCore version 4.5

OM protein - protein search, using sw model

Run on: March 1, 2001, 16:18:27 ; Search time 64.32 Seconds
(without alignments)
10.632 Million cell updates/sec

Title: US-09-331-631A-37
Perfect score: 52
Sequence: 1 CXXXCXXXXXXXXXCXXXC 20

Scoring table: BLOSUM62DX
Gapop 10.0 , Gapext 0.5

Searched: 268485 seqs, 34193795 residues

Total number of hits satisfying chosen parameters: 268485

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	52	100.0	31	21	Y70731	Wnt antagonist pro
2	52	100.0	44	17	R98208	Nucleotide used in
3	52	100.0	48	18	W09616	Pyrularia pubera t
4	52	100.0	50	17	R96122	Leech derived fahs
5	52	100.0	50	17	R96123	Leech derived fahs
6	52	100.0	51	17	R96121	Leech derived fahs
7	52	100.0	55	16	R79020	Hirustasin. Hirud
8	52	100.0	55	19	W46918	Amino acid sequenc
9	52	100.0	57	17	W03663	Elastase inhibitin
10	52	100.0	57	19	W50928	Guamerin, an elast
11	52	100.0	60	14	R40209	Sequence of human
12	52	100.0	60	21	Y82332	Human metallothion
13	52	100.0	61	19	W61601	Human metallothion
14	52	100.0	61	20	W87595	Acidic peptide gua
15	52	100.0	61	21	Y82331	Human metallothion
16	52	100.0	61	21	Y57822	Rabbit liver metal
17	52	100.0	62	21	Y57810	Human metallothion
18	52	100.0	63	21	Y57811	Chicken metallothi
19	52	100.0	68	12	R14774	Brain-derived grow
20	52	100.0	68	13	R25720	Nerve nutrient act
21	52	100.0	68	15	R53383	Polypeptide having
22	52	100.0	70	21	Y75953	Murine skin cell p
23	52	100.0	73	20	Y35935	Extended human sec
24	52	100.0	84	20	W87597	Guamerin/Buforin I
25	52	100.0	84	20	W87599	Guamerin/MSI-78 fu
26	52	100.0	84	20	W87600	Guamerin/MSI-78 fu
27	52	100.0	103	20	Y37949	Chlamydia trachoma
28	52	100.0	105	20	W87706	A cysteine rich so
29	52	100.0	105	21	Y32329	Mouse FIZZ2 inhibi
30	52	100.0	107	20	Y06451	Leech haemostasin
31	52	100.0	108	20	Y35998	Extended human sec
32	52	100.0	108	20	W87710	A cysteine rich so
33	52	100.0	108	21	Y92232	Clone 2155647f - C
34	52	100.0	108	21	Y77408	Human secreted cys
35	52	100.0	108	21	Y77409	cDNA encoding huma
36	52	100.0	108	21	Y32332	Human FIZZ3 inhibi
37	52	100.0	109	17	R84086	T-lymphocyte stimu
38	52	100.0	109	20	Y12933	Amino acid sequenc
39	52	100.0	109	21	Y32327	His(8)-mouse FIZZ1
40	52	100.0	111	20	W87704	A cysteine rich so
41	52	100.0	111	20	W87705	A cysteine rich so
42	52	100.0	111	20	W87709	A cysteine rich so
43	52	100.0	111	21	Y68910	Amino acid sequenc
44	52	100.0	111	21	Y87266	Human signal pepti
45	52	100.0	111	21	Y32328	Mouse FIZZ1 inhibi

ALIGNMENTS

RESULT 1
Y70731
ID Y70731 standard; protein; 31 AA.
XX
AC Y70731;
XX
DT 24-JUL-2000 (first entry)
XX
DE Wnt antagonist protein consensus sequence-1.
XX
KW Wnt antagonist; contraceptive; contraceptive vaccine; oocyte development;
KW female primate contraception; oocyte viability.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 2
FT /label= Unknown
FT /note= "Xaa may be 9 amino acids in length; some
FT amino acids may be absent"
FT Misc-difference 4
FT /label= Unknown
FT /note= "Xaa may be 42 amino acids in length; some
FT amino acids may be absent"
FT Misc-difference 14
FT /label= Unknown
FT Misc-difference 15
FT /label= Unknown
FT Misc-difference 16
FT /label= Unknown
FT Misc-difference 17
FT /label= Unknown
FT Misc-difference 18
FT /label= Unknown
FT Misc-difference 19

```
FT                  /label= Unknown
FT   Misc-difference 21
FT                  /label= Unknown
FT                  /note= "Xaa may be 10 amino acids in length; some
FT                  amino acids may be absent"
FT   Misc-difference 23
FT                  /label= Unknown
FT   Misc-difference 24
FT                  /label= Unknown
FT   Misc-difference 25
FT                  /label= Unknown
FT   Misc-difference 27
FT                  /label= Unknown
FT                  /note= "Xaa may be 7 amino acids in length; some
FT                  amino acids may be absent"
FT   Misc-difference 29
FT                  /label= Unknown
FT                  /note= "Xaa may be 27 amino acids in length; some
FT                  amino acids may be absent"
FT   Misc-difference 31
FT                  /label= Unknown
FT                  /note= "Xaa may be 13 amino acids in length; some
FT                  amino acids may be absent"
XX
PN   WO200021555-A1.
XX
PD   20-APR-2000.
XX
PF   13-OCT-1999;   99WO-US23640.
XX
PR   15-OCT-1998;   98US-0104355.
XX
PA   (HARD ) HARVARD COLLEGE.
XX
PI   Mcmahon AP,  Parr BA,  Vaino S;
XX
DR   WPI; 2000-317845/27.
XX
PT   Contraceptive composition for inhibiting oocyte development in a female
PT   primate comprises a Wnt polypeptide antagonist
XX
PS   Claim 12; Page 44; 57pp; English.
XX
CC   The patent discloses a method of female primate contraception comprising
CC   administering an antagonist of a Wnt polypeptide, inhibiting oocyte
CC   development. Wnt polypeptides are useful for promotive maturation of an
CC   immature oocyte. Wnt polypeptides are also useful for increasing the
CC   number of mature oocytes and to enhance oocyte viability. The present
CC   peptide is a consensus sequence of Wnt antagonist which inhibits the
CC   physiological activity of a Wnt polypeptide. Antagonistic polypeptides
CC   may contain a cysteine-rich domain.
XX
SQ   Sequence   31 AA;


  Query Match             100.0%;  Score 52;  DB 21;  Length 31;
  Best Local Similarity   70.0%;  Pred. No. 1.2e+02;
  Matches   14;  Conservative    6;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|::||||||:||||||
Db       7 ccccccccxxxxxxcxcxxxc 26


RESULT   2
R98208
ID   R98208 standard; Protein; 44 AA.
XX
AC   R98208;
XX
DT   30-DEC-1996  (first entry)
XX
DE   Nucleotide used in production of MSH/MoMuLV chimeric sequence.
XX
KW   Moloney murine leukaemia virus; gp70; 4070A retrovirus; retrovirus;
KW   10A1 murine leukaemia virus; NZB-9-1 murine leukaemia virus;
KW   polytropic MX27 provirus; targetted drug delivery; gene therapy;
KW   single chain antibody; envelope protein; ss.
XX
OS   Synthetic.
XX
PN   WO9630504-A1.
XX
PD   03-OCT-1996.
XX
PF   22-MAR-1996;   96WO-US03908.
XX
PR   24-MAR-1995;   95US-0409648.
XX
PA   (GENE-) GENETIC THERAPY INC.
PA   (UYSC-) UNIV SOUTHERN CALIFORNIA.
XX
PI   Anderson W,  Chiang YL,  Januszeski M,  Mackrell AJ;
PI   Zhao Y;
XX
DR   WPI; 1996-455352/45.
XX
PT   Cell-targetted retroviral vector particles - having envelope protein
PT   modified with targetting polypeptide
XX
PS   Example 2; Page 36; 73pp; English.
XX
CC   Cell targetted retroviral vector particles can be used in gene
CC   therapy to deliver a heterologous gene to a target cell for
CC   expression of a heterologous polypeptide in that cell. The cell
CC   targetted retroviral vector particles comprise an envelope protein
CC   which is modified to contain a targetting polypeptide (a single chain
CC   antibody), or in the case of moloney murine leukaemia virus
CC   (MoMuLV), alpha melanotropin-stimulating hormone (MSH). Two
CC   oligonucleotides (R98207, R98208) were used to substitute sequences in
CC   MoMuLV for MSH sequences.  This oligonucleotide was used to replace
CC   residues G80-P88 of MoMuLV envelope protein (See W04248).
XX
SQ   Sequence   44 AA;


  Query Match             100.0%;  Score 52;  DB 17;  Length 44;
  Best Local Similarity   20.0%;  Pred. No. 1.5e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      15 caagccggtattaacctccc 34


RESULT   3
W09616
ID   W09616 standard; Protein; 48 AA.
XX
AC   W09616;
XX
DT   11-SEP-1997  (first entry)
XX
DE   Pyrularia pubera thionin toxin.
XX
KW   immunotoxin; target specific; monoclonal antibody; anti-CD5; cancer;
KW   treatment; destroy; cell manipulation.
XX
OS   Pyrularia pubera.
XX
PN   WO9641608-A2.
XX
PD   27-DEC-1996.
XX
PF   05-JUN-1996;   96WO-US08811.
XX
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PR   07-JUN-1995;   95US-0479799.
XX
PA   (THER-) THERA PRO.
XX
PI   Gasanov SE,  Rael ED,  Vernon LP;
XX
DR   WPI; 1997-065280/06.
DR   N-PSDB; T47764.
XX
PT   New target specific toxins, partic for cancer cells - comprising a
PT   molecule capable of specific binding to the surface of a cell linked
PT   to Pyrularia thionin peptide.
XX
PS   Claim 1; Page 36; 52pp; English.
XX
CC   This sequence is a Pyrularia thionin (PT) protein. Target specific
CC   toxins can be constructed by linking this toxin to a molecule (esp.
CC   monoclonal antibody anti-CD5) capable of specifically binding the surface
CC   of a cell. The target specific toxin can be used to kill selected
CC   undesirable cells to which PT is generally cytotoxic, partic. cancer
CC   cells. The immunotoxins can also be used for the manipulation of cells
CC   used in tissue and organ grafts, blood transfusions and bone marrow
CC   transplants and to treat graft-versus-host disease. The immunotoxins
CC   display a high degree of specificity and cytotoxicity. PT is membrane-
CC   active, obviating the need for PT to be internalised in order to exert
CC   its cytotoxic effect. PT is a very stable, compact peptide which is
CC   resistant to most proteases and is not immunogenic. The PT cytoxicity is
CC   lost after it is incorporated into the lipid bilayer of a host cell so
CC   that it will not produce second round cytotoxicity towards macrophages
CC   and other cells that come in contact with the membrane of cells contg.
CC   the PT immunotoxin.
XX
SQ   Sequence   48 AA;


  Query Match             100.0%;  Score 52;  DB 18;  Length 48;
  Best Local Similarity   20.0%;  Pred. No. 1.6e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      13 cynvcrlpgtisreicakkc 32


RESULT   4
R96122
ID   R96122 standard; Peptide; 50 AA.
XX
AC   R96122;
XX
DT   17-DEC-1996  (first entry)
XX
DE   Leech derived fahsin based protease inhibitor #2.
XX
KW   Protease inhibitor; isoform; elastase; chymotrypsin; trypsin; leech;
KW   tissue; secretion; saliva; fahsin; antibiotic; diabetes mellitus;
KW   blood clotting disorder; neutrophil function; emphysema;
KW   rheumatoid arthritis; HIV infection; human immunodeficiency virus.
XX
OS   Limnatis nilotica.
XX
PN   WO9613585-A1.
XX
PD   09-MAY-1996.
XX
PF   27-OCT-1995;   95WO-EP04223.
XX
PR   14-MAR-1995;   95EP-0103637.
PR   28-OCT-1994;   94EP-0117053.
XX
PA   (CLOD-) CLODICA SA.
XX
PI   Voerman G;
XX
DR   WPI; 1996-239498/24.
XX
PT   New protease inhibitors from the leech Limnatis nilotica - for
PT   treating, e.g. blood clotting disorders, HIV infection, diabetes
PT   mellitus etc.
XX
PS   Claim 3; Page 26; 41pp; English.
XX
CC   The protease inhibitor peptide isoforms given in R96121-23 are
CC   elastase/chymotrypsin- and trypsin inhibitors which may be isolated
CC   from leech tissue or leech secretions, e.g. saliva.  These peptides
CC   belong to the family of leech derived substances named fahsin's which
CC   also have an antibiotic effect.  The fahsin family of proteins comprise
CC   50/51 amino acids and occur in various isoforms.  These peptides are
CC   useful in the treatment of diabetes mellitus, blood clotting disorders,
CC   disorders of neutrophil function, e.g. emphysema, rheumatoid arthritis,
CC   HIV infection and other immunological and inflammatory diseases.
XX
SQ   Sequence   50 AA;


  Query Match             100.0%;  Score 52;  DB 17;  Length 50;
  Best Local Similarity   20.0%;  Pred. No. 1.7e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      27 criycpkgfevdengcelpc 46


RESULT   5
R96123
ID   R96123 standard; Peptide; 50 AA.
XX
AC   R96123;
XX
DT   17-DEC-1996  (first entry)
XX
DE   Leech derived fahsin based protease inhibitor #3.
XX
KW   Protease inhibitor; isoform; elastase; chymotrypsin; trypsin; leech;
KW   tissue; secretion; saliva; fahsin; antibiotic; diabetes mellitus;
KW   blood clotting disorder; neutrophil function; emphysema;
KW   rheumatoid arthritis; HIV infection; human immunodeficiency virus.
XX
OS   Limnatis nilotica.
XX
PN   WO9613585-A1.
XX
PD   09-MAY-1996.
XX
PF   27-OCT-1995;   95WO-EP04223.
XX
PR   14-MAR-1995;   95EP-0103637.
PR   28-OCT-1994;   94EP-0117053.
XX
PA   (CLOD-) CLODICA SA.
XX
PI   Voerman G;
XX
DR   WPI; 1996-239498/24.
XX
PT   New protease inhibitors from the leech Limnatis nilotica - for
PT   treating, e.g. blood clotting disorders, HIV infection, diabetes
PT   mellitus etc.
XX
PS   Claim 3; Page 26; 41pp; English.
XX
CC   The protease inhibitor peptide isoforms given in R96121-23 are
CC   elastase/chymotrypsin- and trypsin inhibitors which may be isolated
CC   from leech tissue or leech secretions, e.g. saliva.  These peptides
CC   belong to the family of leech derived substances named fahsin's which
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CC   also have an antibiotic effect.  The fahsin family of proteins comprise
CC   50/51 amino acids and occur in various isoforms.  These peptides are
CC   useful in the treatment of diabetes mellitus, blood clotting disorders,
CC   disorders of neutrophil function, e.g. emphysema, rheumatoid arthritis,
CC   HIV infection and other immunological and inflammatory diseases.
XX
SQ   Sequence   50 AA;


  Query Match            100.0%;  Score 52;  DB 17;  Length 50;
  Best Local Similarity   20.0%;  Pred. No. 1.7e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXCXXXC 20
          |:::|::::::::::|:::|
Db     27 criycpkgfevdengcelpc 46


RESULT   6
R96121
ID   R96121 standard; Peptide; 51 AA.
XX
AC   R96121;
XX
DT   17-DEC-1996  (first entry)
XX
DE   Leech derived fahsin based protease inhibitor #1.
XX
KW   Protease inhibitor; isoform; elastase; chymotrypsin; trypsin; leech;
KW   tissue; secretion; saliva; fahsin; antibiotic; diabetes mellitus;
KW   blood clotting disorder; neutrophil function; emphysema;
KW   rheumatoid arthritis; HIV infection; human immunodeficiency virus.
XX
OS   Limnatis nilotica.
XX
PN   WO9613585-A1.
XX
PD   09-MAY-1996.
XX
PF   27-OCT-1995;   95WO-EP04223.
XX
PR   14-MAR-1995;   95EP-0103637.
PR   28-OCT-1994;   94EP-0117053.
XX
PA   (CLOD-) CLODICA SA.
XX
PI   Voerman G;
XX
DR   WPI; 1996-239498/24.
XX
PT   New protease inhibitors from the leech Limnatis nilotica - for
PT   treating, e.g. blood clotting disorders, HIV infection, diabetes
PT   mellitus etc.
XX
PS   Claim 3; Page 26; 41pp; English.
XX
CC   The protease inhibitor peptide isoforms given in R96121-23 are
CC   elastase/chymotrypsin- and trypsin inhibitors which may be isolated
CC   from leech tissue or leech secretions, e.g. saliva.  These peptides
CC   belong to the family of leech derived substances named fahsin's which
CC   also have an antibiotic effect.  The fahsin family of proteins comprise
CC   50/51 amino acids and occur in various isoforms.  These peptides are
CC   useful in the treatment of diabetes mellitus, blood clotting disorders,
CC   disorders of neutrophil function, e.g. emphysema, rheumatoid arthritis,
CC   HIV infection and other immunological and inflammatory diseases.
XX
SQ   Sequence   51 AA;


  Query Match            100.0%;  Score 52;  DB 17;  Length 51;
  Best Local Similarity   20.0%;  Pred. No. 1.7e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXCXXXC 20
          |:::|::::::::::|:::|
Db     27 clifcpngfavdengcelpc 46


RESULT   7
R79020
ID   R79020 standard; protein; 55 AA.
XX
AC   R79020;
XX
DT   09-MAR-1996  (first entry)
XX
DE   Hirustasin.
XX
KW   Hirustasin; serine protease-inhibitor; anticoagulant;
KW   antimetastatic; prophylactic.
XX
OS   Hirudo medicinalis.
XX
FH   Key             Location/Qualifiers
FT   Protein         1..55
FT                   /label= hirustasin
XX
PN   EP662514-A1.
XX
PD   12-JUL-1995.
XX
PF   23-DEC-1994;   94EP-0810750.
XX
PR   07-JAN-1994;   94EP-0810006.
XX
PA   (CIBA ) CIBA GEIGY AG.
PA   (UCPG-) UCP GEN-PHARMA AG.
XX
PI   Fritz H,  Heim J,  Sommerhoff C;
XX
DR   WPI; 1995-242017/32.
DR   N-PSDB; Q97593, Q97594.
XX
PT   New serine protease inhibitor, hirustatin, from leech - also related
PT   DNA and vectors, is useful as an anticoagulant for treating eg.
PT   thrombosis.
XX
PS   Claim 1; Page 18; 36pp; English.
XX
CC   Hirustasin can be isolated from medical leeches, synthesized
CC   chemically or prepared by recombinant DNA techniques, i.e. gene
CC   cloning in 2 micron plasmid DNA and expression in host cells,
CC   especially S. cerevisiae.  Hirustasin is used in the treatment of
CC   conditions associated with chymotrypsin, tissue kallikrein or
CC   cathepsin-G.  It is also used as an antimetastatic and as an
CC   anticoagulant for treatment/prevention of thrombosis, embolism, etc.,
CC   and in the treatment of hypertension.
XX
SQ   Sequence   55 AA;


  Query Match            100.0%;  Score 52;  DB 16;  Length 55;
  Best Local Similarity   20.0%;  Pred. No. 1.8e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXCXXXC 20
          |:::|::::::::::|:::|
Db     29 crirckyglkkdengceypc 48


RESULT   8
W46918
ID   W46918 standard; protein; 55 AA.
XX
AC   W46918;
XX
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DT 24-JUN-1998 (first entry)
XX
DE Amino acid sequence of a Kallikrein inhibitor called Hirustasin.
XX
KW Inhibitor; tissue Kallikrein; Hirustasin; crystalline;
KW Kallikrein/kinin system; X-ray structure; inhibition;
KW complex formation; leech.
XX
OS Hirudo medicinalis.
XX
PN WO9803537-A2.
XX
PD 29-JAN-1998.
XX
PF 23-JUL-1997; 97WO-EP03990.
XX
PR 24-JUL-1996; 96EP-0810487.
XX
PA (NOVS) NOVARTIS AG.
XX
PI Di Marco S, Grutter M, Mittl P;
XX
DR WPI; 1998-120691/11.
XX
PT New hirustasin and hirustasin-kallikrein crystals - used for design
PT or identification of compounds which interfere with complex
PT formation, useful as, e.g. serine protease inhibitors
XX
PS Disclosure; Page 42; 45pp; English.
XX
CC The present sequence represents an inhibitor of tissue Kallikrein called
CC Hirustasin. The crystalline form of the protein is claimed. Hirustasin
CC may have a potential medical application in those diseases where tissue
CC Kallikrein/kinin system seems to play a major role. Coordinates for the
CC X-ray structure of the Hirustasin/Kallikrein complex at 2.4 Angstrom
CC resolution are given in the specification. The Hirustasin/Kallikrein
CC crystal structure can be used for the design or identification of the
CC structure of compounds that can interfere with the building of the
CC Hirustasin/Kallikrein complex. It can also be used to design new
CC inhibitors of serine proteases such as Kallikrein.
XX
SQ Sequence 55 AA;

Query Match 100.0%; Score 52; DB 19; Length 55;
Best Local Similarity 20.0%; Pred. No. 1.8e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXCXXXC 20
|:::|:::::::::::|:::|
Db 29 crirckyglkkdengceypc 48

RESULT 9
W03663
ID W03663 standard; protein; 57 AA.
XX
AC W03663;
XX
DT 18-JUN-1997 (first entry)
XX
DE Elastase inhibiting protein from the leech Hirudo nipponia.
XX
KW Elastase inhibitor; rheumatoid arthritis; emphysema; psoriasis;
KW guameri; Korean leech; Hirudo nipponia; over-production; excess.
XX
OS Hirudo nipponia.
XX
PN GB2300190-A.
XX
PD 30-OCT-1996.
XX
PF 07-SEP-1995; 95GB-0018312.
XX
PR 27-APR-1995; 95KR-0010206.
XX
PA (KOAD) KOREA ADV INST SCI & TECHNOLOGY.
PA (KANK-) KANKOKU KAGAKU GIJUTSUIN.
XX
PI Hong S, Jung H, Kang K, Kim D, Lee J;
XX
DR WPI; 1996-467114/47.
XX
PT New specific elastase inhibitor from the leech Hirudo nipponia -
PT useful for treatment of rheumatoid arthritis, emphysema and
PT psoriasis
XX
PS Claim 1; Page 14; 23pp; English.
XX
CC W03663 represents the sequence of an elastase-inhibiting protein
CC designated Guamerin. The protein was derived from the guameri (Korean
CC leech Hirudo nipponia), it is used to treat diseases related to
CC excessive elastase production, especially rheumatoid arthritis,
CC emphysema and psoriasis. The protein specifically inhibits elastase
CC so has fewer side effects than known elastase inhibitors. Also it has
CC lower inhibition constant (81 fM), indicating higher activity, and
CC relatively good stability against heat, acids and alkalis (no loss
CC of activity after 15 mins. at 100deg.C or at pH 1-11).
XX
SQ Sequence 57 AA;

Query Match 100.0%; Score 52; DB 17; Length 57;
Best Local Similarity 20.0%; Pred. No. 1.9e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXCXXXC 20
|:::|:::::::::::|:::|
Db 35 cmifcpngfkvdengceypc 54

RESULT 10
W50928
ID W50928 standard; protein; 57 AA.
XX
AC W50928;
XX
DT 31-JUL-1998 (first entry)
XX
DE Guamerin, an elastase-inhibiting protein isolated from Korean leech.
XX
KW Guamerin; Korean leech; elastase inhibition; subtilisin;
KW protease inhibitor.
XX
OS Hirudo nipponia.
XX
PN WO9809993-A1.
XX
PD 12-MAR-1998.
XX
PF 11-MAR-1997; 97WO-KR00036.
XX
PR 09-SEP-1996; 96KR-0038844.
XX
PA (KOAD) KOREA ADV INST SCI & TECHNOLOGY.
XX
PI Kang K, Kim D;
XX
DR WPI; 1998-193555/17.
XX
PT Guamerin derived synthetic peptide(s) - useful for development of
PT elastase- and subtilisin-inhibiting agents
XX
PS Example 1; Figure 1; 20pp; English.
XX
CC The invention relates to a peptide which inhibits protease activity,

```
CC   derived from Guamerin, an elastase-inhibiting protein isolated from
CC   Guameri (Hirudo nipponia). Also claimed is a dimeric peptide, which
CC   inhibits protease activity, formed by intermolecular disulphide bonds
CC   between  peptides of above. The peptides can be used for the development
CC   of elastase- and subtilisin-inhibiting agents. The dimeric peptides have
CC   strong elastase- and subtilisin-inhibiting activities and are more
CC   practical for treatment of diseases associated with elastase and
CC   subtilisin.  The peptides can be safely used for the human body as
CC   potential drugs, since they have relatively low molecular weights.
CC   The present sequence represents Guamerin.
XX
SQ   Sequence   57 AA;


  Query Match            100.0%;  Score 52;  DB 19;  Length 57;
  Best Local Similarity   20.0%;  Pred. No. 1.9e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      35 cmifcpngfkvdengceypc 54


RESULT  11
R40209
ID   R40209 standard; protein; 60 AA.
XX
AC   R40209;
XX
DT   04-FEB-1994  (first entry)
XX
DE   Sequence of human metallothionine MT-2, class I.
XX
KW   Metallothionine; MT-2; class I.
XX
OS   Homo sapiens.
XX
PN   DE4212134-A.
XX
PD   19-AUG-1993.
XX
PF   10-APR-1992;   92DE-4212134.
XX
PR   17-FEB-1992;   92GB-0003299.
XX
PA   (INDE-) INDENA SPA.
XX
PI   Bombardelli E,  Ponzone C,  Puglisi PP;
XX
DR   WPI; 1993-265710/34.
XX
PT   Topical compsn. for protecting tissue e.g. skin - against toxic
PT   heavy metals, contg. metal-complexing protein with high cysteine
PT   content
XX
PS   Disclosure; Page 3; 7pp; German.
XX
CC   Class I metallothionines are characterised by a high Cys content and
CC   the absence of aromatic AAs; a molecular weight of 6000-7000;
CC   characteristic thio-metal complexes and clusters;
CC   and a high metal content.
XX
SQ   Sequence   60 AA;


  Query Match            100.0%;  Score 52;  DB 14;  Length 60;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      28 ckkscccsccpvgcakcaqgc 47


RESULT  12
Y82332
ID   Y82332 standard; protein; 60 AA.
XX
AC   Y82332;
XX
DT   22-JUN-2000  (first entry)
XX
DE   Human metallothionein protein SEQ ID NO:2.
XX
KW   Human; metallothionein; heavy metal removal.
XX
OS   Homo sapiens.
XX
PN   JP2000060561-A.
XX
PD   29-FEB-2000.
XX
PF   21-AUG-1998;   98JP-0235879.
XX
PR   21-AUG-1998;   98JP-0235879.
XX
PA   (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN.
XX
DR   WPI; 2000-249676/22.
DR   N-PSDB; A08087.
XX
PT   New metallothionein polymer used for removal of heavy metals contains
PT   metallothioneins connected together by three amino acid residues -
XX
PS   Claim 3; Page 8; 19pp; Japanese.
XX
CC   The present invention describes a metallothionein polymer in which n
CC   metallothioneins are connected together and the C-terminal amino acid
CC   residue and the N-terminal amino acid residue of the each adjacent
CC   metallothionein are combined by three amino acid residues Xaa. The
CC   metallothionein polymer is useful for the removal of heavy metals. The
CC   present sequence represents a human metallothionein protein, which is
CC   used in the exemplification of the present invention.
XX
SQ   Sequence   60 AA;


  Query Match            100.0%;  Score 52;  DB 21;  Length 60;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      28 ckkscccsccpvgcakcaqgc 47


RESULT  13
W61601
ID   W61601 standard; Protein; 61 AA.
XX
AC   W61601;
XX
DT   27-OCT-1998  (first entry)
XX
DE   Human metallothionein HMBP-I.
XX
KW   Human; metallothionein; HMBP-1; metal toxicity; immune disorder;
KW   inflammatory disease; cancers.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 28
FT                   /label= Unknown
FT                   /note= "Encoded by TYC"
XX
```

```
PN   WO9831795-A2.
XX
PD   23-JUL-1998.
XX
PF   30-DEC-1997;   97WO-US24129.
XX
PR   17-JAN-1997;   97US-0785530.
XX
PA   (INCY-) INCYTE PHARM INC.
XX
PI   Goli SK,  Hillman JL;
XX
DR   WPI; 1998-414095/35.
DR   N-PSDB; V45334.
XX
PT   Human metallothionein, HMBP-I - used to develop products for
PT   diagnosis, prevention and treatment of heavy metal toxicity, cancer,
PT   inflammatory disease and immune disorders
XX
PS   Claim 1; Fig 1; 53pp; English.
XX
CC   The human metallothionein HMBP-1 (heavy metal binding protein),
CC   polypeptides can be used to treat heavy metal toxicity, e.g. myopathy,
CC   encephalopathy, renal nephropathy or necrosis, liver necrosis or
CC   cirrhosis, anaemia, myocardial damage, and pneumonitis or any other
CC   condition or disease caused by exposure to heavy metals. They can also
CC   be used to treat immune disorders e.g. bronchial asthma, chronic
CC   obstructive pulmonary disease, pneumonia, multiple sclerosis, rheumatoid
CC   arthritis, inflammatory bowel disease, chronic hepatitis, cerebral
CC   oedema, or inflammatory disease or cancers.
XX
SQ   Sequence   61 AA;


  Query Match             100.0%;  Score 52;  DB 19;  Length 61;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      29 ckksccscepvgcakcahgc 48


RESULT  14
W87595
ID   W87595 standard; peptide; 61 AA.
XX
AC   W87595;
XX
DT   19-MAR-1999  (first entry)
XX
DE   Acidic peptide guamerin.
XX
KW   Antimicrobial; fusion; acidic peptide; recombinant; microorganism;
KW   guamerin; basic peptide.
XX
OS   Synthetic.
XX
PN   WO9854336-A1.
XX
PD   03-DEC-1998.
XX
PF   28-MAY-1998;   98WO-KR00132.
XX
PR   09-APR-1998;   98KR-0013372.
PR   28-MAY-1997;   97KR-0021312.
XX
PA   (KOAD ) KOREA ADV INST SCI & TECHNOLOGY.
PA   (SAMY-) SAMYANG GENEX CORP.
XX
PI   Hong S,  Kang MH,  Kim JH,  Kim S,  Lee H,  Lee JH;
XX
DR   WPI; 1999-059844/05.
DR   N-PSDB; V83774.
XX
PT   New method for mass production of antimicrobial peptides - by
PT   constructing fusion genes comprising acidic and antimicrobial
PT   peptide genes and transforming host with vector containing these
XX
PS   Example 1; Fig 1A; 52pp; English.
XX
CC   The invention relates to mass production of antimicrobial peptides. The
CC   method comprises constructing a fusion gene containing a first gene
CC   encoding a negatively charged acidic peptide having at least two cysteine
CC   residues, and a second gene encoding a positively charged basic
CC   antimicrobial peptide. A host microorganism is transformed with a vector
CC   containing the fusion gene and then cultured. The expressed antimicrobial
CC   peptide is then recovered. The method is used to mass produce
CC   antimicrobial peptides in recombinant microorganisms. The inhibitory
CC   effect of the expressed antimicrobial peptide upon the growth of the host
CC   microorganism is considerably reduced by fusing it to the acidic peptide.
CC   Therefore, the use of the fusion gene provides an economic, recombinant
CC   alternative of mass producing antimicrobial peptides, which overcomes the
CC   disadvantages of low-productivity and poor economy, previously
CC   encountered by recombinant and chemical methods. The present sequence
CC   represents the guamerin gene product. Guamerin can be used as an acidic
CC   peptide in the construction of the fusion protein.
XX
SQ   Sequence   61 AA;


  Query Match             100.0%;  Score 52;  DB 20;  Length 61;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      37 ceifcpngfkvdengceypc 56


RESULT  15
Y82331
ID   Y82331 standard; protein; 61 AA.
XX
AC   Y82331;
XX
DT   22-JUN-2000  (first entry)
XX
DE   Human metallothionein protein SEQ ID NO:1.
XX
KW   Human; metallothionein; heavy metal removal.
XX
OS   Homo sapiens.
XX
PN   JP2000060561-A.
XX
PD   29-FEB-2000.
XX
PF   21-AUG-1998;   98JP-0235879.
XX
PR   21-AUG-1998;   98JP-0235879.
XX
PA   (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN.
XX
DR   WPI; 2000-249676/22.
DR   N-PSDB; A08087.
XX
PT   New metallothionein polymer used for removal of heavy metals contains
PT   metallothioneins connected together by three amino acid residues -
XX
PS   Claim 3; Page 8; 19pp; Japanese.
XX
CC   The present invention describes a metallothionein polymer in which n
CC   metallothioneins are connected together and the C-terminal amino acid
CC   residue and the N-terminal amino acid residue of the each adjacent
CC   metallothionein are combined by three amino acid residues Xaa. The
```

CC metallothionein polymer is useful for the removal of heavy metals. The
CC present sequence represents a human metallothionein protein, which is
CC used in the exemplification of the present invention.
XX
SQ Sequence 61 AA;

Query Match 100.0%; Score 52; DB 21; Length 61;
Best Local Similarity 20.0%; Pred. No. 2e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      29 ckksccscccpvgcakcaqgc 48
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Search completed: March 1, 2001, 16:18:27
Job time: 496 sec